

Amendments to the Claims

1. (currently amended) A method for establishing a high-speed modem relay connection over a voice frame network between an originating modem with an associated calling-leg gateway and an answering modem with an associated called-leg gateway, the method comprising:

detecting a signal during end-to-end physical layer negotiations between the originating modem and the answering modem indicating that both modems are high-speed modems, said determining being performed by one or more of the associated gateways;

terminating end-to-end physical layer negotiations between the originating modem and the answering modem, said terminating being performed by one or more of the associated gateways, wherein said terminating includes suppressing transmission of the signal detected from the gateway detecting the signal to the other gateway; and

determining if voice compression, echo cancellation or both have been enabled and disabling voice compression, echo cancellation or both if enabled;

negotiating local physical layer on either end of the connection between the originating modem and the calling-leg gateway and the answering modem and the called-leg gateway independently, wherein the calling-leg gateway serves as proxy for the answering modem and wherein the called-leg gateway serves as proxy for the originating modem; and

performing modem relay operations ~~without further negotiations.~~

2. (original) The method of claim 1, wherein said determining includes first detecting an amplitude-modulated answer (ANSam) tone at one of the gateways and second detecting a digital call menu (CM) code at the other one of the gateways.

3. (original) The method of claim 1, wherein said determining includes detecting an amplitude-modulated answer (ANSam) tone, said tone-detecting being performed by one or more of the associated gateways, and wherein said determining further includes second

detecting a digital call menu (CM) code, said code-detecting being performed by one of the associated gateways, which method further comprises:

signaling, by the first one of the gateways to perform said tone-detecting, of the other one of the gateways that said tone-detecting has occurred.

4. (canceled)

5. (previously presented) The method of claim 1, wherein said negotiating includes:

at the calling-leg gateway detecting two additional digital CM codes from the originating modem and completing local calling-leg physical layer negotiation, and at the called-leg gateway transmitting at least two additional digital CM codes to the answering modem and completing local called-leg physical layer negotiation.

6. (canceled)

7. (canceled)

8. (currently amended) A method for establishing a modem relay connection over a voice frame network between an originating modem and an answering modem, the method comprising:

first detecting a predefined modulated answer tone at an answering voice frame network gateway corresponding with the answering modem;

determining if voice compression, echo cancellation or both are enabled, and if so, disabling voice compression, echo cancellation or both;

second detecting a predefined digital code at a calling voice frame network gateway corresponding with the originating modem;

suppressing signal transmission between the originating modem and the answering modem;

at the calling gateway detecting two additional predefined digital codes from the originating modem and completing calling local physical layer negotiation;

at the answering gateway transmitting at least two additional predefined digital codes to the answering modem and completing answering local physical layer negotiation independently of the calling local physical layer negotiations; and

enabling signal transmission between the originating modem and the answering modem ~~without further negotiation~~, whereby the voice frame network connection is selectively automatically transitioned from voice mode to modem relay mode upon a determination that the originating modem and the answering modem are both high-speed modems.

9. (canceled)

10. (canceled)

11. (canceled)

12. (currently amended) A modem relay connection apparatus for use in a voice frame network gateway to establish a data channel between two modems, the apparatus comprising:

an amplitude-modulated answer (ANSam) tone detector;

a code detector for detecting a digital call menu (CM) code responsive to an amplitude-modulated answer tone;

a signal suppression mechanism responsive to said code detector for suppressing signals between the modems to terminate end-to-end negotiation between the two modems;

a pass-through invocation mechanism responsive to said tone detector for disabling voice compression if the same is determined to have been enabled and for disabling echo cancellation if the same is determined to have been enabled; and

a proxy negotiation mechanism responsive to said signal suppression mechanism for negotiating a local physical layer between the gateway and a local one of the two modems independent of negotiations between another gateway and the other one of the two modems and to begin a modem relay session ~~without further negotiations~~.

13. (canceled)

14. (original) The apparatus of claim 12 which further comprises:

a signaling mechanism for signaling a remote gateway upon detection of an amplitude-modulated answer tone by said tone detector.

15. (currently amended) A computer-readable medium containing a program for establishing a high-speed modem relay connection over a voice frame network between an originating modem with an associated calling-leg gateway and an answering modem with an associated called-leg gateway, the program comprising:

instructions for detecting signals during end-to-end physical layer negotiations between the originating modem and the answering modem that indicate both modems are high-speed modems, said determining instructions being executed by one or more of the associated gateways; and

instructions for terminating such end-to-end physical negotiations between high-speed modems, said terminating instructions being executed by one or more of the associated gateways and said instructions causing signal transmission between the two gateways to be suppressed;

instructions for determining if voice compression, data cancellation or both are enabled, and to disable voice compression, data cancellation or both;

instructions for negotiating local physical layer on either end of the connection between the originating modem and the calling-leg gateway and between the answering modem and the called-leg gateway independently, wherein the calling-leg gateway serves as proxy for the answering modem and wherein the called-leg gateway serves as proxy for the originating modem; and

instructions for beginning a modem relay session ~~without further negotiations.~~

16. (original) The computer-readable medium in accordance with claim 15, wherein said instructions for determining include instructions for first detecting an amplitude-modulated answer (ANSam) tone at one of the gateways and instructions for second detecting a digital call menu (CM) code at the other one of the gateways.

17. (canceled)

18. (previously presented) The computer-readable medium in accordance with claim 15, wherein said instructions for negotiating include:

instructions executing at the calling-leg gateway for detecting two additional digital CM codes from the originating modem and for completing local calling-leg physical layer negotiation, and

instructions executing at the called-leg gateway for transmitting at least two additional digital CM codes to the answering modem and for completing local called-leg physical layer negotiation.

19. (currently amended) An apparatus for establishing a high-speed modem relay connection over a voice frame network between an originating modem with an associated calling-leg gateway and an answering modem with an associated called-leg gateway, the apparatus comprising:

means for detecting signals during end-to-end physical layer negotiations between the originating modem and the answering modem that indicate that both modems are high-speed modems, said determining means being operatively connected with one or more of the associated gateways;

means for terminating end-to-end physical layer negotiations between the originating modem and the answering modem, said terminating means being operatively connected with one or more of the associated gateways, and operable to suppress the signals detected from transmission between the two gateways;

means for disabling voice compression if the same is determined to have been enabled
and for disabling echo cancellation if the same is determined to have been enabled;

means for negotiating local physical layer on either end of the connection between the originating modem and the calling-leg gateway and the answering modem and the called-leg gateway independently of the negotiation between the originating modem and the calling-leg gateway, wherein the calling-leg gateway serves as proxy for the answering modem and wherein the called-leg gateway serves as proxy for the originating modem; and

means for beginning a modem relay session ~~without further negotiations~~.

20. (original) The apparatus of claim 19, wherein said determining means includes means for detecting an amplitude-modulated answer (ANSam) tone at one of the gateways and means for detecting a digital call menu (CM) code at the other one of the gateways.